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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,939	04/21/2004	William R. Siskos	1930A1	7209

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EXAMINER	
LAZORCIK, JASON L	
ART UNIT	**PAPER NUMBER**
1731	

MAIL DATE	DELIVERY MODE
05/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/828,939	SISKOS, WILLIAM R.	
	Examiner	Art Unit	
	Jason L. Lazorcik	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29 and 38-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29 AND 38-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicants amendment of claim 40 to correct antecedent basis issues therein and the amendments to claims 19, 21 to cast said claims in independent form are admitted. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-29 and 38-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 teaches an "outer wall" and it further sets forth that said outer wall "defines a boundary" which is "within the boundary defined by the outer wall". Applicants claim is construed to recite an element (e.g. the outer wall) which defines a first boundary or demarcation between two other elements of the apparatus (e.g. the sheet supporting surface and the passageway) and that this boundary is "within the boundary defined by the outer wall". It is unclear to the Examiner whether the Applicant intends to claim two distinct boundaries defined by the outer wall or alternatively that "the boundary" is the exclusive boundary defined by the outer wall. If the former is the intended construction, Applicant has failed to provide adequate antecedent basis for

"the boundary". If the latter is the case, Examiner asserts that it is unclear how a boundary can be defined "within" itself. In either case the particular interrelation between elements in the claimed apparatus is unclear, and therefore the particular metes and bounds for which Applicant seeks patent protection are likewise rendered unclear and indefinite.

Claim Rejections - 35 USC § 102

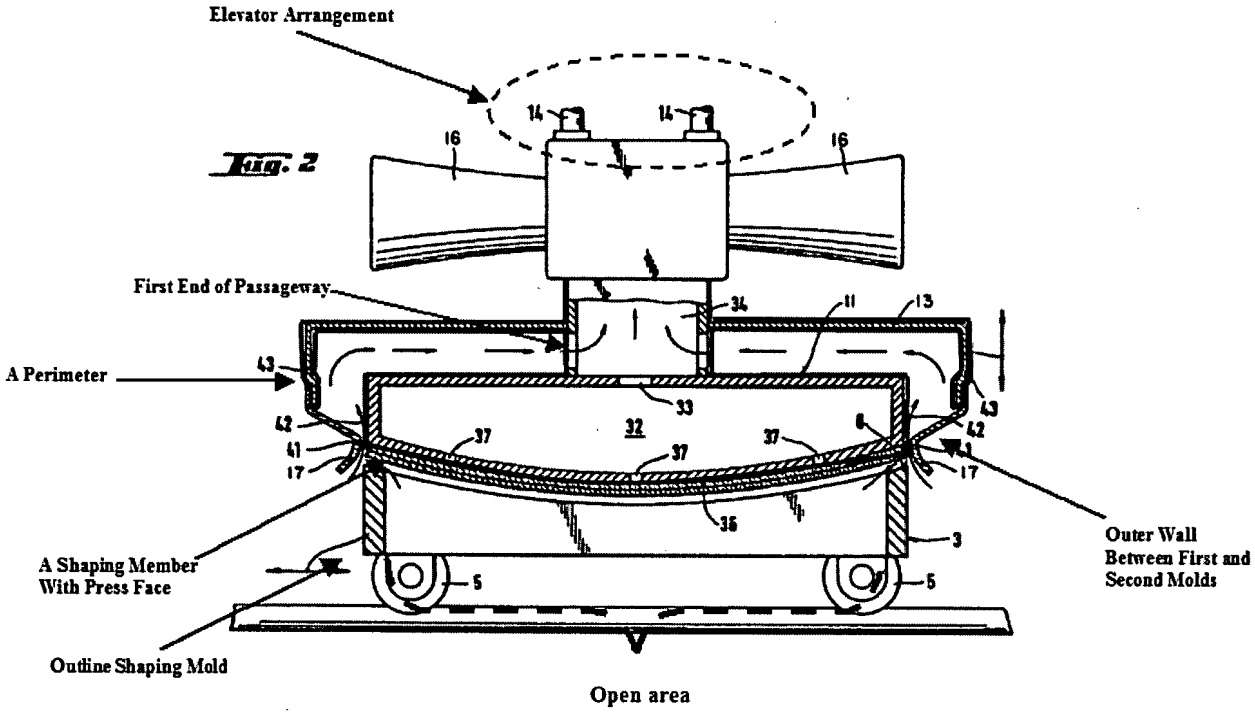
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 2, 4-7, 12-18, 24- 29, 38, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuster (US 5,713,976). Briefly, Kuster teaches a sheet bending apparatus comprising a concave annular bending block serving as both a bending ring and means for conveyance and a convex bending block acting from above an the surface of the glass sheet. With particular respect to claim 1, Applicant is directed to the annotated excerpt figure 2 below from the instant reference.

The Kuster apparatus presents a "major surface" of a first mold here indicated by a bold black line. This major surface defines the claimed features including the "perimeter" and the "shaping member" within and offset from said perimeter. The apparatus further provides "at least one passageway in the major surface" in a "non-shaping area" [**Claim 38**] which lies between the shaping member and the perimeter.

As clearly set forth in the prior office action, the Kuster reference teaches that the first mold is paired with a second mold or "outline shaping mold". The latter mold consists of spaced end rails and spaced central rails which collectively define a continuous, annular sheet supporting surface [***Claim 2***] and an "open area". An "outer wall" (17) is provided between the sheet supporting surface and the first end of the passageway, thereby forming a "boundary" with or between the sheet supporting surface and said passageway. An "elevator arrangement" (14) is provided to for relative movement of the first and second molds.



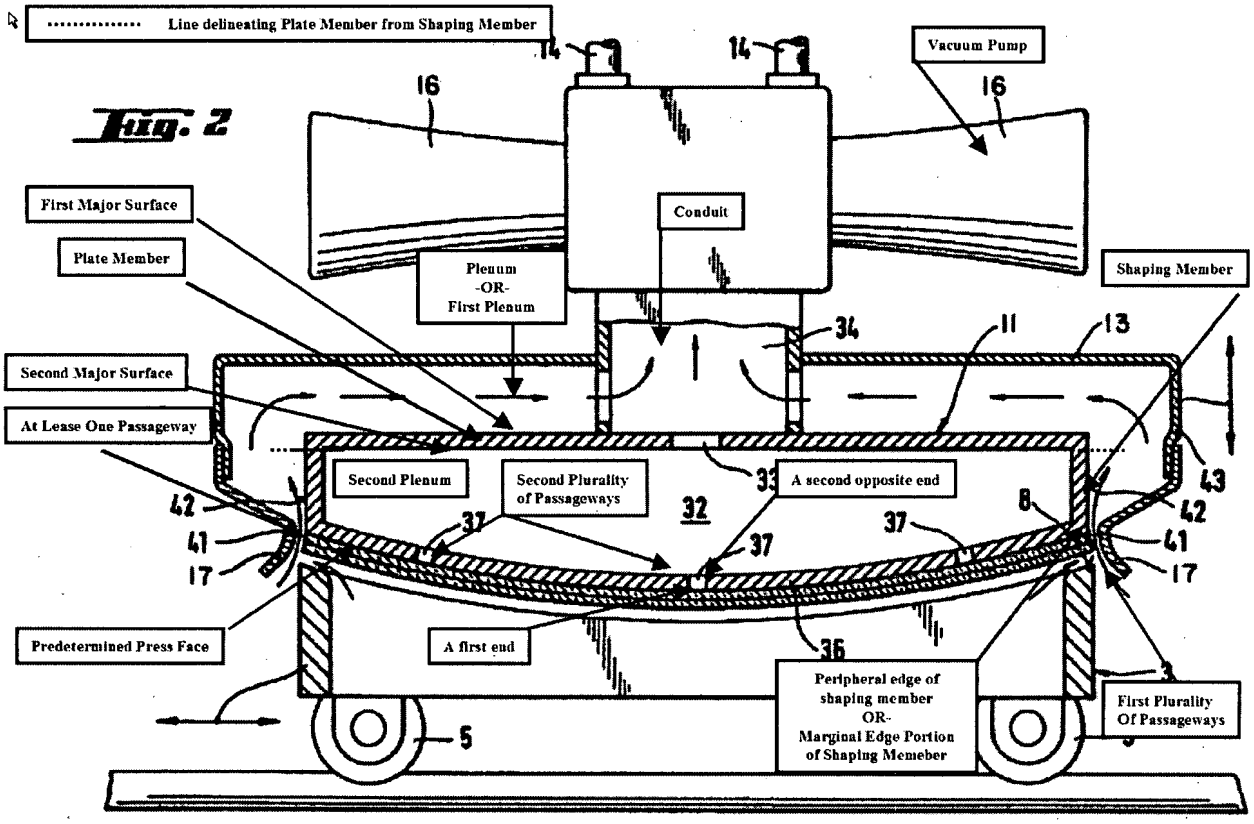
The outer wall described above is mounted to the major surface of the first mold [***Claim 4***], and in cooperation with the first and second molds, said outer wall defines an enclosure during a pressing operation (Column 4, lines 36-38). This outer wall surrounds and is *spaced from the first end of the passageway and the shaping member*

[***Claim 5***] of the first mold and has one part of *an aligning arrangement (17)* [***Claim 7***] which cooperates with an aligning arrangement of the second mold (eg. the rails) as claimed.

Kuster teaches (column 4, Lines 23-38) that the "surrounding flange (17) which reduces the gap between the casing (13) and the monolithic convex bending block (11)" can be made to "eliminate the gap completely and by appropriate means to close the space between the annular bending ring (3) and the casing (13)". Where surrounding flange (17) or the outer wall eliminates "the gap completely", it is understood that the outer wall is effectively "mounted to" the exterior peripheral surface of the outline shaping mold or "to the central rails and the end rails" as claimed [**Claim 6**]. In light of this disclosure, Examiner asserts that the Kuster apparatus defines at least one configuration wherein the first and second shaping molds serve as opposite sides of an enclosure and wherein the sheet supporting surface of the second mold, the first end of the passageway, and the shaping member of the first mold are all internal to and therefore "face" the enclosure. It is further evident from the above figure 2 excerpt that in the "enclosed configuration", the Kuster apparatus provides fluid communication from "the open area" through "at least one passageway" (37) and (33) to a second opening positioned outside the enclosure (e.g. through the suction fans (16)) to allow fluid communication between the interior and exterior of the enclosure.

Regarding **Claim 12** and in light of the rejection of Claim 6 above, the rails in figure 2 above are understood to have an "I" shaped cross section with the upper end providing the sheet supporting surface. Further as outlined in the rejection of Claim 6,

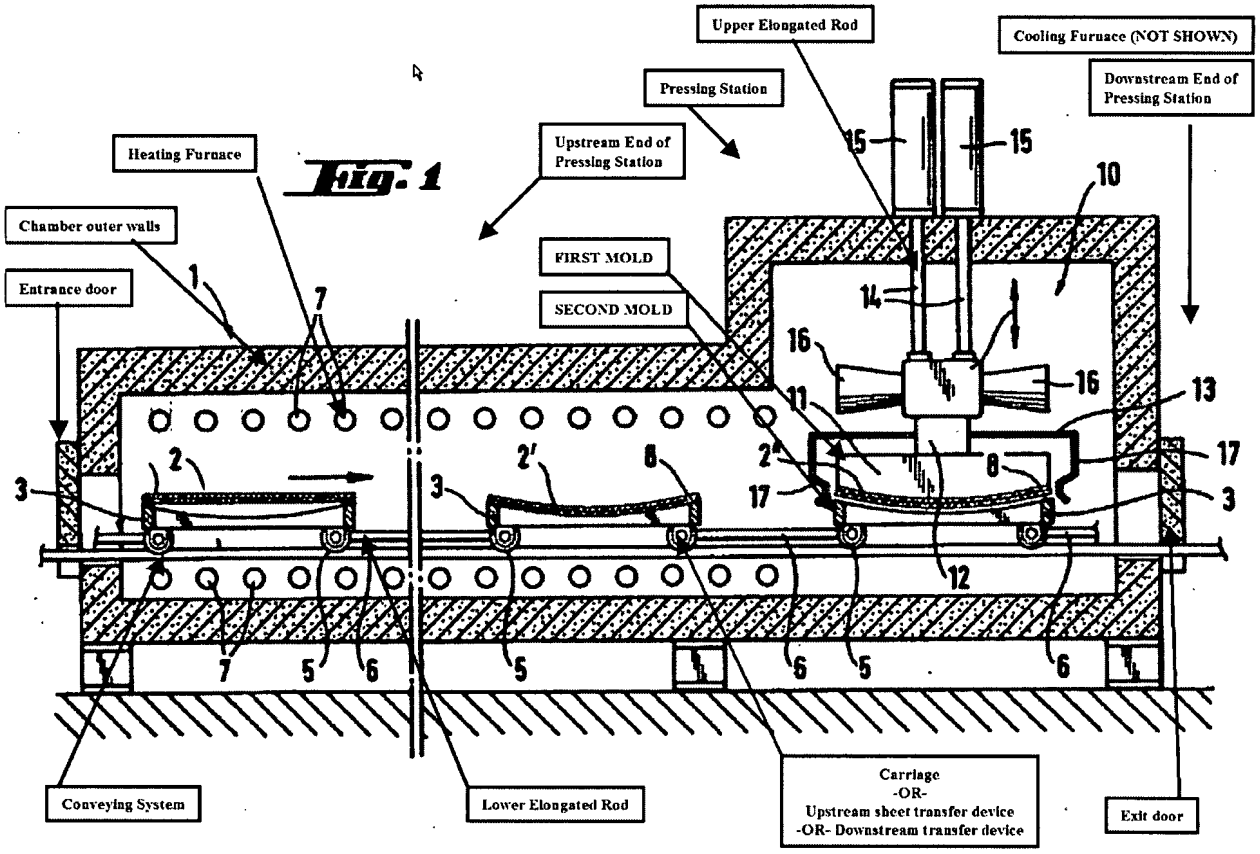
the outer wall has one end "mounted" to the outer vertical surface of the "I" rail and extends away from the "I" rail and the open area during a press operation.



Claims 13, 14, 15, 16, 17, and 18 are anticipated in light of the second annotation of Figure 2 from the Kuster reference presented immediately above. Individual elements indicated on the first annotated version of Figure 2 have been re-annotated where appropriate to reflect applicant's chosen lexicon in the identified claims.

Claims 24, 25, 26, 27, and 28 are anticipated in light of the annotated excerpt figure 1 presented below. Said figure has been edited with examiners annotations in order to assist correlation of prior art teachings with applicants claimed elements in

applicants chosen lexicon. Details of the operation are also set forth in the immediate reference Column 3, line 56 through Column 4, line 49.



Claim 29 is anticipated in light of the combination of the annotated Figure 1 and the Figure 2 second annotation as presented above. Since the Fans (16) in figure 2 are in direct fluid communication with the open area of the second shaping mold through passageways (33) and (37), the Kuster apparatus is understood to be capable of moving air "through the open area of the second mold"

With respect to **Claim 40**, the fan (16) described in the Kuster disclosure, here held functionally equivalent to the claimed vacuum pump, must implicitly be in fluid communication with the conduit or "the chamber" in order for the apparatus to function

as disclosed. Although not explicitly set forth by Kuster, said fan must implicitly be in fluid communication through a hole in the outer wall of the conduit in order to draw the disclosed "partial vacuum" (column 4, line 33) within the casing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuster (5,713,976). Kuster teaches the use of a lifting mechanism (15) in order to adjust the spacing between the first and second molds or to "move the second mold towards and away from the first mold". Kuster is silent regarding the specific nature of this lifting mechanism, however it would be well within the prevue of one of ordinary skill in the art at the time of the invention to select an appropriate lifting means (e.g. a piston or a

hydraulic jack). Specifically, a piston or a hydraulic jack would have been an obvious choice for adjusting the separation between first and second molds since these devices utilize few moving parts yet are capable of generating large amounts of lifting force.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuster (5,713,976) as applied to claim 1 above, and further in view of Jacques (5,437,703). Kuster fails to explicitly set forth a case wherein the central rails are secured in position and the end rails are pivotally mounted to pivot from a first position providing a generally horizontal support for a sheet to a second position where portions of the ends of the end rails are raised above the central rails. Jacques presents a ring mold having movable ends providing said first generally horizontal support (Fig 9) and said second raised configuration (Fig 11) to achieve deep and/or complex bent shapes (Abstract).

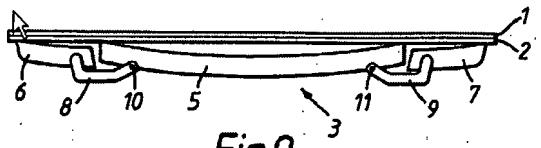


Fig.9

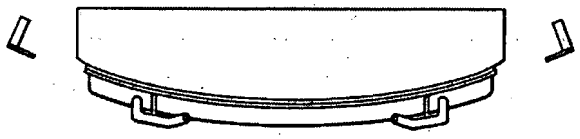


Fig.11

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention seeking to achieve a deep bend in a glass sheet to utilize the reconfigurable ring mold as taught by Jacques in the sheet molding system taught by Kuster.

Claims 8 through 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuster (5,713,976) as applied in the rejections of Claim 1 above and in further view of Skeen (US 6,629,436 B1).

With respect to **Claim 8**, Kuster teaches that the central and end rails have a "I" shaped cross section (as evidenced in the Fig 2 excerpt above) while failing explicitly set forth that they may by constructed with a "T" shaped cross section as claimed. Skeen teaches (Column 2, Lines 3-6) that glass bending ring mold "rails themselves are usually pre-shaped to have a shape to support the unbent sheet while also supplying the mold for the curved or bent sheets" and that (see Fig 5 excerpt and Column 2, Lines 36-39) "the rail member itself may be a bar member that supports the glass sheets slightly inboard of the glass sheets periphery or it may be an "L" or "T" shaped member." It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the central and end rails of the Kuster process to utilize a "T" shaped member as taught by Skeen. This would have been an obvious modification to one seeking to provide adequate support to both an unbent and bent glass sheet.

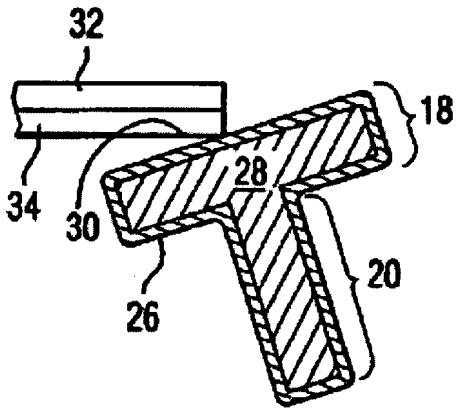


FIG. 5

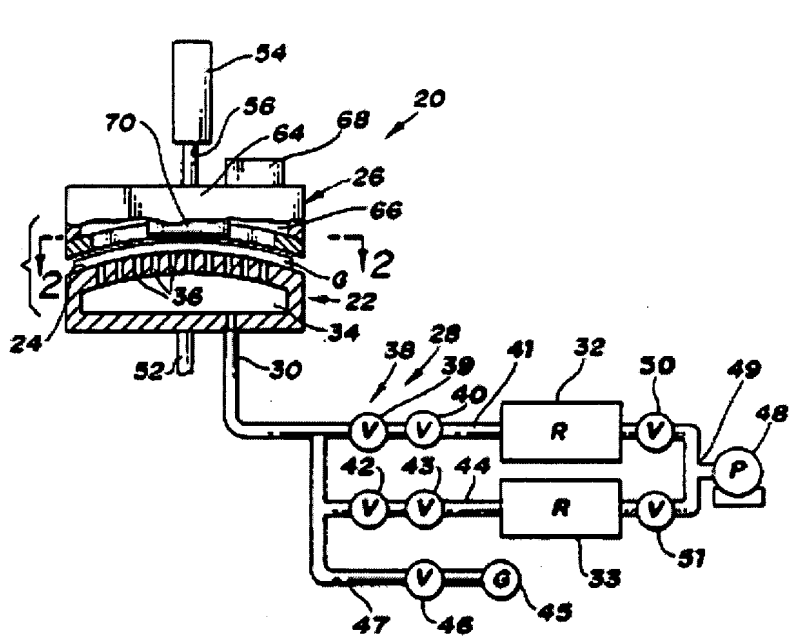
Regarding **Claim 9** and in light of the rejections of Claims 6 and 12 under 35 U.S.C. 102(b), Kuster teaches that the surrounding flange (17) portion of the outer wall can "eliminate the gap completely" by closing "the space between the annular bending ring (3) and the casing (13)" and as such is "connected" to the outer surface of the rail and extends away from said rail. In accord with the obviousness type modification set forth in the rejection of Claim 8 above and the premise set forth in Claims 6 and 12, it would be obvious to "connect" the surrounding flange (17) portion of the outer wall to the outer surface of the horizontal member of the "T" rail in order to "eliminate the gap completely" between the ring and the casing as taught by Kuster.

Claim 10 is obvious in light of the combined rejections of Claim 8 and 9 above.

With respect to **Claim 11**, it is understood that the process of *connecting* the surrounding flange (17) portion of the outer wall to the outer surface of the horizontal member of the "T" rail, as set forth in the rejection of Claim 9, results in a functionally equivalent structure to the one claimed wherein "the outer wall is portion of the horizontal member of the "T" farthest from the open area".

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuster (5,713,976) as applied to claim 1, 17, and 18 above, and further in view of Shetterly (5,376,158). Kuster teaches (See Fig 2 – Second Annotation above) a second plenum inside the first plenum and the first plenum connected by a conduit to a vacuum pump. Kuster further indicates (Column 4, Lines 60-64) the "an excess pressure is briefly created in the hollow space (32) or "the second plenum" when the pair of glass sheets has to be replaced on the annular bending ring". Kuster fails to explicitly indicate that

the second plenum should be connected via a valve having a first open position and a second open position. Shetterly, teaches a vacuum press mold utilizing a valve system (indicated as V in excerpt image below) to control application of vacuum or pressurized gas to the perforated pressing mold.



Further, Two-way valves of the type described by the applicant are old and well known tools in the art for switching a system between vacuum and pressure. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a two-way valve or valve system as taught by Shetterly to control the application of "an excess pressure" in the second plenum as taught by Kuster. The use of a valve would have been obvious for one seeking selective application of either elevated pressure or vacuum to a system.

Claims 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over (5,713,976) as applied to claims 1, 21, and 17, respectively, and further in view of

Vanhuysee (US 6,276,173 B1). Kuster teaches that the forming plate (36) or the shaping member "may be covered by a refractory air-permeable fabric or membrane" (Column 4, Lines 55-57). Kuster fails to explicitly limit the weave density with respect to the size of the openings of the first or second passageways or that the sheet supporting surface of the second mold should be provided with a mesh cloth covering in addition to the one provided upon the press face of the shaping member.

With respect to **Claims 20**, Vanhuysse teaches that "the metallic covering—and the mesh when present—cover the perforations (of the mold surface), so that they partially lose their function...which is to promote the flow of air" and "The use of a coarser mesh has a positive effect on the air permeability, but in turn results in an even more frequent contact between the mesh and glass". While Vanhuysse sets forth the relationship between covering weave density for a ring mold in a glass pressing operation, the tradeoff between adequate air flow and mold face contact with the glass sheet would reasonably be expected to apply for a covering on a press member of the type set forth in the present invention. Specifically, since the role of the passageways in the first mold, as indicated by Kuster, is to provide air flow at the molding surface and a fabric covering is provided on said surface, it would be obvious to one of ordinary skill in the art at the time of the invention to optimize the weave density of said covering as taught by Vanhuysee. It would be obvious to perform such an optimization in order to provide a covering weave density between a too tight weave which would restrict air flow through the passageways and a too loose weave potentially marring the glass surface by allowing mold face contact on the glass sheet.

Regarding **Claim 23**, Vanhuysse teaches (Column 1, Lines 14-25) "the contact member or covering can for example be used to cover the support rings (pressure and tempering rings)" and "the actual moulding means, such as for example the pressure moulds, can also be covered with the covering." It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an appropriate fabric covering on both the first and second molds as taught by Vanhuysse in order to minimize direct contact of either of said mold faces with the glass surface in order to minimize undue marring of the glass surface.

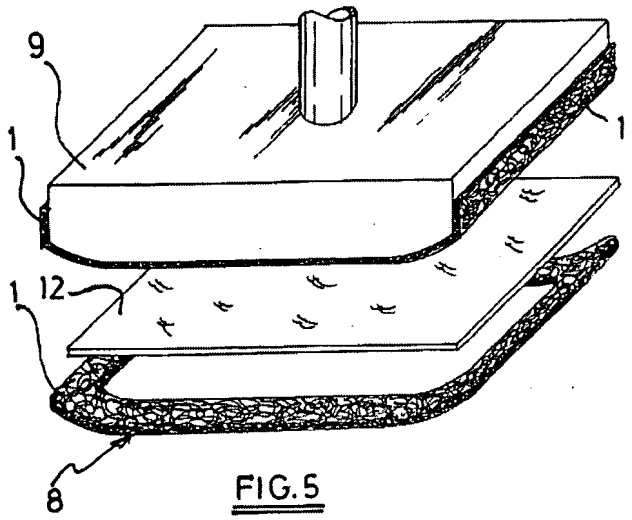


FIG.5

Allowable Subject Matter

Claims 21 and 22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: Prior art does not teach nor fairly suggest the sheet bending apparatus having every detail as herein claimed and wherein a plurality of passageways provided in the

press face have a first opening at the press face and a second opening with a decreased size at a spaced distance from the press face to provides a recess in the press face and wherein a plate having a plurality of spaced holes there through is mounted in said recess.

Response to Arguments

Applicant's arguments filed April 26, 2007 have been fully considered but they are not persuasive.

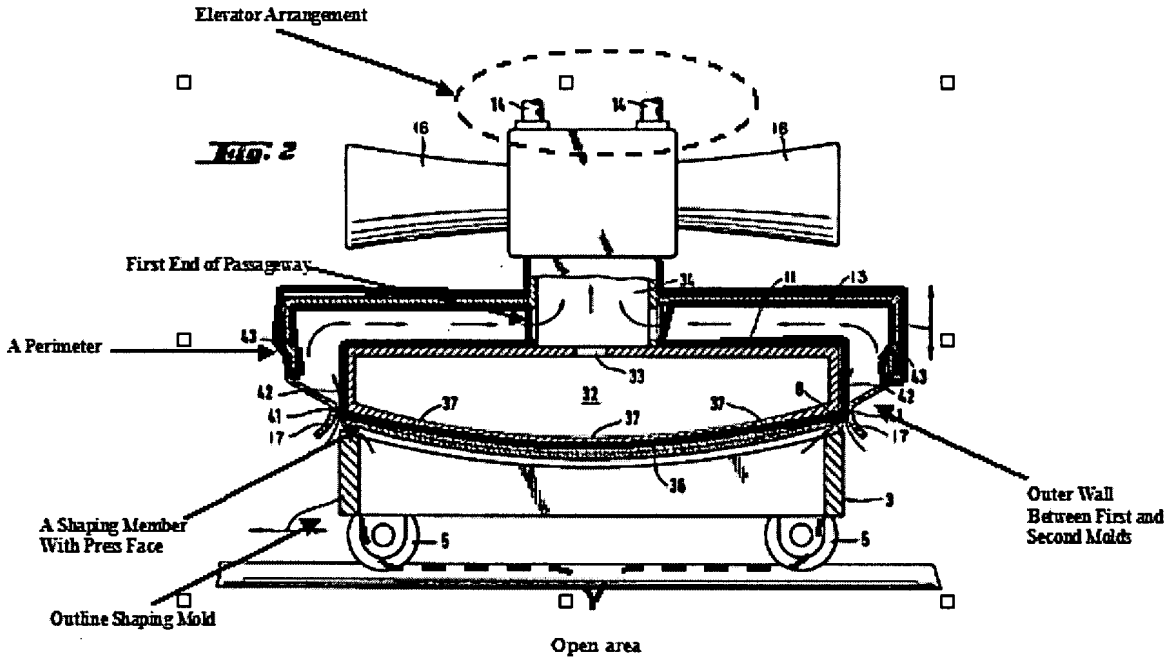
With respect to the rejection of Claims 1-29 and 38-40 under 35 U.S.C. 112, second paragraph, Applicant argues that Claim 1 "positively recites that the sheet supporting surface and the first end of the passageway (are) within the boundary" and not that the boundary is within the boundary. Examiner strongly disagrees.

Claim 1 does not recite the limitation in the manner asserted by Applicant. Specifically in direct contradistinction to Applicants assertions, Claim 1 sets forth "the outer wall defining a boundary with the sheet supporting surface and the first end of the passageway" and that this defined boundary is "within the boundary defined by the outer wall". It does not read that "the sheet supporting surface and the first end of the passageway (are) within the boundary".

As currently presented, the instant claim does infact read an outer wall defining a boundary which is within the boundary defined by the outer wall". For at least this reason, the rejection under 35 U.S.C. 112, second paragraph as presented in the office action dated March 7, 2007 is proper. Applicant is strongly advised amend lines 14-16 to recite the following in order to clarify the metes and bounds of the of the instant claim

and to unambiguously recite the intended invention; "an outer wall between the first and second molds, the outer wall defining a boundary ~~with~~, wherein the sheet supporting surface and the first end of the passageway are located within the boundary defined by the outer wall."

Applicant asserts that element (17) of Figure 2 in Kuster provides both the claimed "a major surface" and the claimed "outer wall" of claim 1. No such argument has been made by the Examiner in the previous Office Action dated march 07, 2007. The annotated Figure 2 excerpt from the prior Office Action has been reproduced below with an enhanced bold line reiterating the "major surface" as disclosed in the Kuster reference. As clearly depicted in the excerpt figure 2, Kuster provides a major surface delineated by the bold black line which presents a "perimeter" in the general region of element (43). A portion of the bold surface in the region of lead line (36) is clearly within and spaced from the perimeter in the region of element (43). The outer wall is a distinct element from but mounted to the "major surface" of the first mold. Since the record clearly indicates the distinct nature of the major surface and the outer wall as defined by the Kuster reference, Applicants arguments founded upon the unitary nature of these two elements is without merit.



With respect to the rejection of Claim 6, Applicant asserts that Kuster does not teach the complete elimination of the gap but rather presents an invitation to invent such a feature. Examiner strongly disagrees. As set forth in the previous Office Action, Kuster teaches (column 4, Lines 23-38) that the "surrounding flange (17) which reduces the gap between the casing (13) and the monolithic convex bending block (11)" can be made to "eliminate the gap completely and by appropriate means to close the space between the annular bending ring (3) and the casing (13)". The disclosure by Kuster directly teaches an arrangement wherein the gap has been eliminated.

With respect to Claim 7, since elements (17), (11) and (3) are present in a cooperative aligned arrangement to effect the pressing operation, they are implicitly understood "have parts of an aligning arrangement".

With respect to claim 13, Applicant has defined a first shaping mold having a major surface, a portion of the major surface, and a plate with first and second surfaces. Applicant then states that the major surface is the second surface of the plate, thereby reading over the Kuster apparatus. Applicant effectively claims a broad element (e.g. the first shaping mold) with multiple sub-features (e.g. a major surface, a portion of the major surface, a first surface and a second surface). Applicant subsequently states that one surface (e.g. the major surface) "is" another surface (e.g. "the second surface"). Applicants claim language sets forth an ambiguous relationship particularly between these two surfaces which is open to broad interpretation, however with respect to the instant claim no arguments have been relating how the claimed structure is patentably distinguished over the apparatus of prior art.

It is believed that any additional arguments not explicitly here addressed appropriately addressed in the rejections above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLL

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